



Balasaheb J. Nagare

Office: Department of Physics, University of Mumbai, Santacruz (E), Mumbai-400 098.

Gender: Male

Nationality: Indian

Email: bjnagare@gmail.com.

Mobile: 91 9920354283

About Me

I am working as Associate Professor at Department of Physics, University of Mumbai, Mumbai with 22 years of teaching and 19 years of research experience in the area of Electronic structure Calculations, Molecular Dynamics and Continuum Scale.

Objective

To apply my knowledge of scientific computing and methodologies (modeling and simulations) to solve computational and related problems in the field of Applied Physics, Materials Science and engineering.

Research Interests

- Catalytic Properties of Atomic clusters
- Hydrogen Energy and Storage
- Water Splitting
- Glassy Materials

Professional Competency

- Knowledge of application of the density-functional theory, molecular mechanics, molecular dynamics and continuum scale.
- Experience in large-scale numerical simulations, Monte Carlo and molecular dynamics (classical and quantum) methods, molecular mechanics etc.
- Experience in using quantum chemical and molecular mechanics packages (open source and commercial) such as Materials Studio, Quantumwise, OCTOPUS, VASP, Gaussian 03, ABINIT, OCTOPUS, Yambo, Quantum espresso.
- Experience in porting codes on a range of Unix and GNU Linux platforms, Hp BLADES, SGI, SUN, DEC Alpha, IBM, etc.

Education

- Ph. D. (Physics), 20 August 2007, Department of Physics, University of Mumbai, INDIA.
Thesis title: Analytical Investigations of Binary Alloys.
Advisor: Professor S.J. Gupta, Department of Physics, University of Mumbai, INDIA.
- Master of Science (Physics), % Marks: 68.05, June 1996, Department of Physics, University of Pune, INDIA.
- Bachelor of Science (Physics), % Marks: 86.33, June 1994, Padmashree Vikhe Patil College, Pravanagar, INDIA.
- Higher Secondary School, % Marks: 72, June 1991, Padmashree Vikhe Patil College, Pravanagar, INDIA.
- Secondary School Certificate, % Marks: 74.57, June 1989, New English School, Satral, INDIA.

Competative Exam

- GATE: March 2003, MHRD, Percentile-86.16.
- JEST (Joint Entrance Screening Test): March 2003, JNCASR, INDIA.
- SLET (State Level Eligibility Test): May 2001, Maharashtra State.

Teaching Experience

Lecturer, Department of Physics, Fergusson College, Pune, 3rd Jan-30th Aug 1997.

Lecturer, Department of Physics, Birla College, Kalyan, 1st Sept. 1997- 19th March 2003.

Assistant Professor (Selection Grade), Department of Physics, University of Mumbai, 20th March 2003-25th May, 2015.

Associate Professor, Department of Physics, University of Mumbai, 26th May 2015-onwards.

Completed / Ongoing Research Projects

- Study of Metal-Nanotube interaction for Hydrogen Storage using density functional theory sanctioned by Department of Atomic Energy(DAE)-BRNS 2009-2012.
- Minor research project sanctioned by Mumbai University on Study of Metal-Nanotube interaction using density functional theory during 2006-07.
- Minor research project sanctioned by Mumbai University on Development of Numerical method to study the vibrational properties of Binary alloys during 2004-05.
- UGC Minor research project on Study of Structural and electrical properties of BaTiO_3 : A comparative study during 2002-2004.

Research Publications

1. Patel, S. R and Chitnis, V. R and Shukla, A and Rao, A. R and Nagare, Balasaheb J. Temporal variability and estimation of jet parameters for Ton 599, The Astrophysical Journal, 866,2, 102, 2018.
2. Study of electronic and optical properties of ZnO clusters using TDDFT method, Nagare, Balasaheb J and Chavan, Sunil Pandurang and Bambole, Vaishali A, Materials Research Express, volume 4, 10, 106304, 2017.
3. Static Polarizabilities and Optical absorption spectra of Boron Clusters ($n= 2-20, 38$ and 40) using First Principles, Nagare, Balasaheb J and Chavan, Sunil and Bambole, Vaishali, Computational and Theoretical Chemistry, 1125, 54–62, 2018.
4. Broadband study of blazar 1ES 1959+ 650 during flaring state in 2016, Patel, SR and Shukla, A and Chitnis, VR and Dorner, D and Mannheim, K and Acharya, BS and Nagare, Balasaheb J. Astronomy and Astrophysics, 611, A44, 2018.
5. Optical properties of alkali substituted boron clusters using TDDFT method, Chavan, Sunil P and Bambole, Vaishali A and Nagare, Balasaheb J, AIP Conference Proceedings, 1989, 1, 020006, 2018.

6. Balasaheb J. Nagare, "The Optical Response of Nanoclusters under Confinement." *RSc Advances*, 5, issue-91, 77478, 2015 (Impact-Factor:3.874).
7. Balasaheb J. Nagare, "The Optical Response of Nanoclusters under Confinement." *RSc Advances*, 5, issue-91, 77478, 2015.
8. Balasaheb J. Nagare, Dilip G. Chacko and Sajeev Chacko, "Structural and Electronic Properties of Sodium Clusters under Confinement", *Physical review B*, 91(5), 054112, 2015.
9. Pooja srivastav, Balasaheb J. Nagare, D. G. Kanhere and Prasenjit Sen, "Electronic structure of the spin gapless material Co-doped PbPdO_2 ", *J. Appl. Phys*, 114, 103709, 2013.
10. Balasaheb J. Nagare, Sanjay Jaware and Darshan Habale, "First-Principles Calculation of Ferromagnetism in Carbon-doped TiO_2 Clusters", *Computational Materials Science*, 68, 127–131, 2013.
11. M. R. Sonawane, Darshan Habale, Balasaheb J. Nagare and R. K. Shivade "Comparative study of adsorption of O_2 , CO_2 , NO_2 and SO_2 on Pristine and Si-doped Carbon Nanotubes", *Advanced Materials Research*, 678, 179-184, 2013.
12. Balasaheb J. Nagare, Darshan Habale, Sajeev Chacko and Swapan K. Ghosh, "Hydrogen Storage in Na/SWCNT Systems" *J. Mater. Chem.*, 22(41), 22013-22021, 2012.
13. M. R. Sonawane, Balasaheb J. Nagare, "Study of Adsorption Properties of O_2 , CO_2 , NO_2 and SO_2 on Si-doped Carbon Nanotube Using Density Functional Theory", *AMM*, vols. 110-116, 315-320, 2012.
14. Darshan Habale, M. R. Sonawane, and Balasaheb J. Nagare "First-principles Calculation of Hydrogen Storage in Na-doped Carbon Nanotube", *IEEE, ISBN: 978-1-4577-2035-2*, p1-6, 2011.
15. M. R. Sonawane, Darshan Habale, Balasaheb J. Nagare and Rita Gharde, "Interaction of O_2 , CO_2 , NO_2 and SO_2 on Si-doped Carbon Nanotube", *IJAPM*, vol. 1 no. 2 pp. 138-143, 2011.
16. Balasaheb J. Nagare, Sajeev Chacko and D. G. Kanhere, "Ferromagnetism in Carbon-Doped Zinc Oxide Systems", *J. Phys. Chem. A*, 2689-2696, 2010.
17. Balasaheb J. Nagare, S. B. Jaware and S. S. Patil, "Electronic and Magnetic properties of Carbon-doped TiO_2 Nanoclusters: DFT Investigations", *Nanostructured Materials for Electronics and Environmental Applications*, 235-240, 2010.
18. Renu R. Khurana, Vaibhavi V. Patel, P. M. Dongre, Balasaheb J. Nagare, "In-Silico Molecular Docking and Virtual Pharmacokinetic screening study of Psoralidin and its derivatives as Phosphatidylinositol 3-kinase Inhibitors", *Bioinformatics Trends*, Volume-5, Issue-1-2, 163-178, 2010.
19. M.K. Patel, B.J. Nagare, D.M. Bagul, S.K. Haram, D.C. Kothari, "Controlled synthesis of Cu nanoparticles in fused silica and BK7 glasses using ion beam induced defects", *Surface and Coatings Technology*, 196, 96-99, 2005.
20. K.V. Amrute, B.J. Nagare, R.P. Fernandes, V.V. Sivakumar, A. Gupta, D. Kanjilal, D.C. Kothari, "Modification of magnetic anisotropy in ferromagnetic metallic glasses using high energy ion beam irradiation", *Surface and Coatings Technology*, 196, 136-138, 2005.